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ABSTRACT

This guide offers teachers and after-school group leaders 12 fun and engaging activities. Activities feature lessons on trees, water, wind, the earth, food, and waste. The activities are designed to help children aged 5-8 become more aware of the natural environment and fundamental conservation principles. Titles of children's books are embedded in the activities in order to help stimulate discussions. The Teacher Training Opportunities can serve as excellent resources to help teachers feel comfortable leading discussions and activities on the environment. The Teacher's Guide At-A-Glance, which includes an activity correlation to the National Science Education Standards, is designed to help incorporate the activities into the classroom curriculum. Reproducible Woodsy Owl and Woodsy Owl Badges are also included. (SAF)

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Woodsy Owl Activity Guide

K-3

WOODSY OWL

Activity Guide

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Give a hoot. Don't pollute.

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Woodsy Owl Activity Guide

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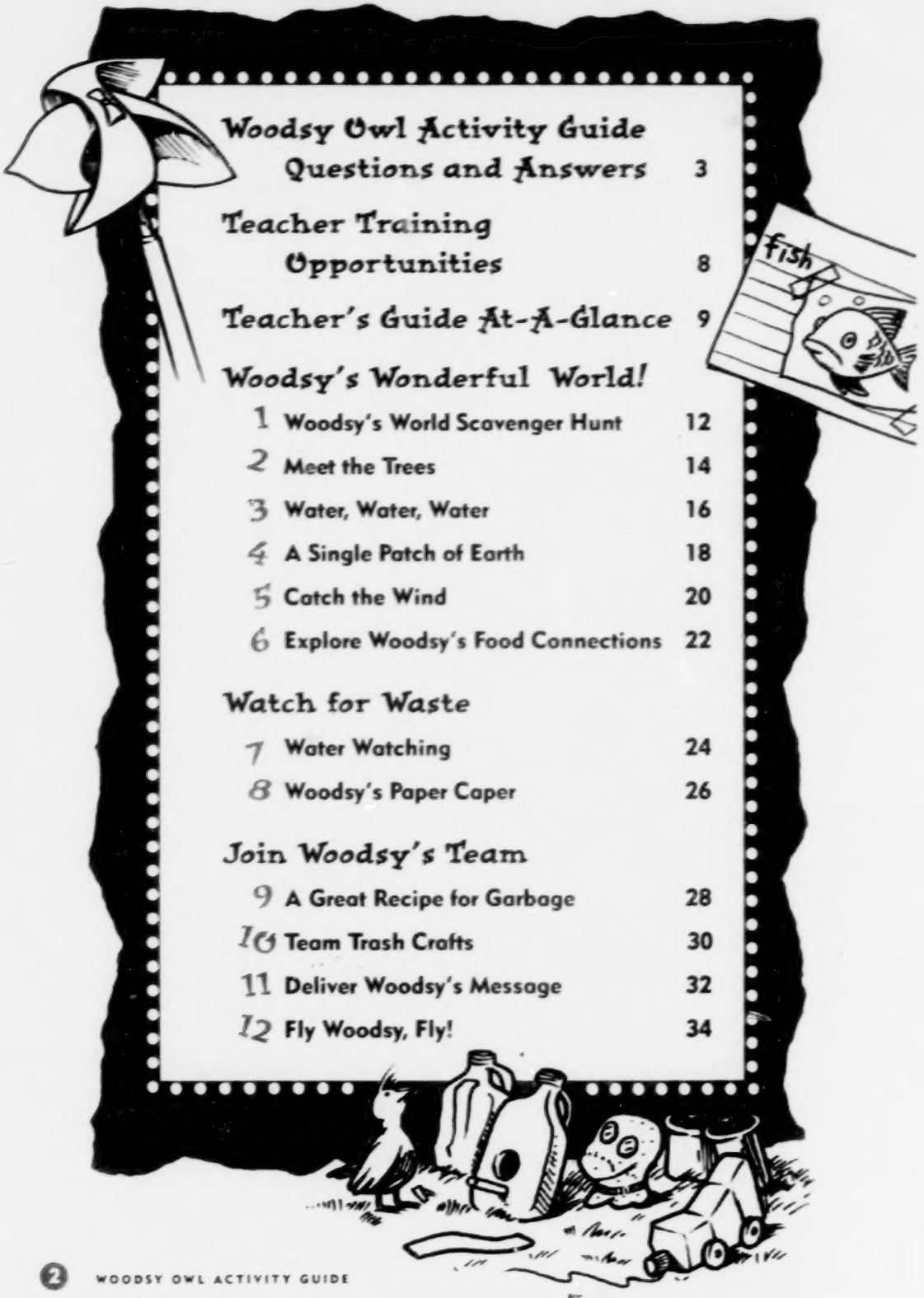

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Woodsy Owl Activity Guide
QUESTIONS AND ANSWERS

Who is Woodsy Owl?

In 1970, a fanciful creature named Woodsy Owl entered the lives of children all around the country. This outdoorsy new friend from the forest invited them to help him spread the word on protecting the environment—"Give a Hoot. Don't Pollute." As years passed, more children became Woodsy's allies by developing an awareness of their local environment and a desire to use its resources in appropriate ways. Today, Woodsy has a new motto, "Lend a Hand—Care for the Land!" With this motto, this Forest Service symbol befriends another generation of children and motivates them to form healthy, lasting relationships with nature. Caring, friendly, outdoorsy, and wise, Woodsy is a good friend and partner.

What is the Woodsy Owl Activity Guide?

This guide offers teachers and after-school group leaders 12 fun and engaging activities. The activities are designed to help children ages 5 to 8 become more aware of the natural environment and fundamental conservation principles. You'll find titles of children's books embedded in the activities that can help stimulate discussions. The Teacher Training Opportunities can serve as excellent resources that will help you feel comfortable leading discussions and activities about the environment. The Teacher's Guide At-A-Glance, which includes an activity correlation to the *National Science Education Standards,* are designed to help you incorporate the activities into your classroom curriculum. Finally, look for the reproducible Woodsy Owl and Woodsy Owl Badges at the end of the guide. Be creative–use the Woodsy Owl to help decorate a Woodsy's World activity area in your room.

What are the goals of the Woodsy Owl Activity Guide?

Children need a solid foundation of active, hands-on, and positive encounters with the natural world. Adults cannot expect very young children to instantly care about the complex issues behind such problems as acid rain and crowded landfills. All of these problems are too far removed from a child's immediate experience. As their awareness and appreciation grows, a sense of responsibility and respect for their local environment will ultimately follow. The order of the activities in the Woodsy Owl Activity Guide reflects this philosophy. They are grouped into the following three sections:

Woodsy's Wonderful World!

EXPLORE *the environment and develop a sense of respect and appreciation for it.*

Watch for Waste

REALIZE *that you have a responsibility and the ability to use natural resources wisely.*

Join Woodsy's Team

APPLY *what you have learned and make a difference where you live.*

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How do I use the activities?

Each activity has a similar format to make your planning easier:

- ***What You Need***

  This is what you'll need to do the activity. Activities usually require common items such as markers, paper, tape, and string.

  In keeping with Woodsy's message, try to reuse or recycle the materials you use in each activity. This recycling icon will appear when it is especially appropriate to reuse and/or recycle what you use.

- ***Time***

  The time clock shows the average time it takes to complete the activity. Most activities have one or two parts that each take between 20 and 30 minutes.

  There is a separate clock to indicate each part and each clock is shaded to represent the time span. For activities that take several days or weeks (such as Activity 9: A Great Recipe for Garbage), the time clock will indicate how long it takes to set up and begin the activity. Use the time clock as a general guide since the time may vary depending on how you choose to adapt the activity to your group's needs.

- ***Get Ready!***

  This section reminds you of things you need to do to prepare for the activity. Often, it will simply involve gathering materials or cutting paper for younger children.

- ***Activity***

  This section takes you carefully through each step of the activity. The section always includes a "Get Started" step designed to activate children's interest in the subject and a "Close" step designed to help children reaffirm what they've learned. In this section you may also find titles of books that relate to the activity.

- ***Tips***

  These are suggestions that may make you more effective and your job easier and safer.

- ***Activity Extensions***

  Look for an activity extension at the end of each activity. This section suggests ways to take the activities further by having children do fun, related projects. Often, these projects will make an activity more challenging for older children or will simply help you build on a topic.

  Look for the Take it Home icon—this indicates an activity extension that youngsters can do at home with their families.

- ***Words To Know***

  These are selected words that children can learn as they complete the activity.

In many activities, you'll find a picture of Woodsy giving helpful tips to teachers and interesting facts about the environment for children.

What age group will benefit most from these activities?

The Woodsy Owl Activity Guide has been developed for children ages 5 to 8. As you do the activities, you may find that some activities seem too challenging for the younger children. Likewise, some may not challenge older children enough. We have provided tips on how to modify an activity for younger children and included extension activities that can be used to challenge older children.

How do I set up my groups?

You may find that reading a book, exploring the outdoors, and making an art project are all included in a single activity. Each part of the activity may require a different way of organizing the children into groups. Reading a book could be a whole-group activity—drawing projects might be done in pairs. In most cases a specific grouping is recommended. Many after-school programs will have a wider age range in a given group. In such situations, you may find it helpful to pair an older child (who can write) with a younger child (who can help observe and draw pictures).

Will activities work in both classrooms and after-school programs?

Every activity is designed to work well in a wide range of settings. Each type of setting may offer some advantage to the activity. After-school programs may offer more opportunities to spend time outside exploring nature. Classrooms may have access to a broader selection of resources. In any setting, try to find a quiet room or space where your groups can meet to read and discuss the activity. These activities are also designed to be used by groups in urban, suburban, small town, or rural environments. As always, the guide will be most valuable when you adapt an activity to make it best meet the needs of your group.

How do I prepare for the activities?

Many activities require just 10 to 15 minutes of preparation. For some activities you may need to gather materials in advance, plan a short walking trip, or look for suggested resources. While the activities are designed to be user-friendly, it is always a good idea to read them before you begin and to plan ahead for possible trouble spots.

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Do I have to do every activity?

No. Each activity is independent of the others. However, you might want to group activities that deal with similar topics or build a sequence by selecting an activity from each of the three sections.

Suggested Activity Sequences

Activity 1: Woodsy's World Scavenger Hunt

Follow with:
4: A Single Patch of Earth
5: Catch the Wind
6: Explore Woodsy's Food Connections

Activity 4: A Single Patch of Earth

Follow with:
9: A Great Recipe for Trash

Activity 2: Meet the Trees

Follow with:
8: Woodsy's Paper Caper
10: Team Trash Crafts

Activity 7: Water Watching

Follow with:
11: Deliver Woodsy's Message

Activity 3: Water, Water, Water

Follow with:
7: Water Watching

Activity 8: Woodsy's Paper Caper

Follow with:
11: Deliver Woodsy's Message

Activity 9: A Great Recipe for Garbage

Follow with:
4: A Single Patch of Earth
6: Explore Woodsy's Food Connections
10: Team Trash Crafts

Activity 5: Catch the Wind

Follow with:
1: Woodsy's World Scavenger Hunt

Fly Woodsy, Fly!, page 34, is a great game to play after any activity.

How can I involve children's families?

When children get enthusiastic about the environment, they're likely to carry that enthusiasm home to their families. There are a number of ways to help get the whole family involved—establishing contact, however brief, is the key. Here are a few ideas:

- Send home a letter describing what activities the children will be doing. Including parts of this introductory section will help parents understand why their children are doing the activities.
- If it's appropriate, schedule a few parents, grandparents, or older brothers and sisters to help with some of the walking field trips.
- Find out if any family member's job involves working with nature or environmental issues. You might turn to a family member as a resource on the topics you're exploring, and even have him or her lead an activity.
- Encourage your budding conservationists to take home some of the projects, especially Fly, Woodsy, Fly!.

Always be open to new ideas—opportunities to involve parents may arise once you begin a particular activity. Despite your best efforts it's still often hard to get busy families involved; don't worry if only some families respond.

How can Woodsy help?

Most children will gravitate to Woodsy because they like animals and cartoon characters. Use Woodsy as often as you can to motivate children and capture their interest. Nearly every page of the Activity Guide features illustrations of Woodsy engaged in environmentally-friendly activities. Always share these pictures with your group. Woodsy is featured at the back of the guide in a form that you can photocopy and give to children to color. Give a name like "Woodsy's Hour" to the period of time each day that your group spends doing Woodsy's activities. You can talk about Woodsy as if he were present, for instance, "Woodsy is here because he loves to learn about creatures that live outdoors." Finally, encourage children to learn more about owls and their habitats. Let them know that many national forests are homes to several species of owls. You may even want to create your own "Getting to Know Woodsy" activity. For more information about the USDA Forest Service and its Woodsy program, contact The Smokey Bear-Woodsy Owl Center of Excellence, 402 S.E. 11th Street, Grand Rapids, MN 55744.

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TEACHER TRAINING OPPORTUNITIES

To learn more about teaching students to appreciate and explore the environment, contact the following organizations:

Project Learning Tree
(Pre-K to 12 Activity Guides)
1111 Nineteenth Street, NW
Washington, D.C. 20036
(202) 463-2462

Project WILD
(K-12 Wildlife & Aquatic Activity Guides)
5430 Grosvenor Lane
Bethesda, MD 20814
(301) 493-5447
http://eelink.umich.edu/wild/

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TEACHER'S GUIDE AT-A-GLANCE

Use this guide to incorporate Woodsy's activities into your curriculum:

Activity 1: Woodsy's World Scavenger Hunt

Objective: By taking a nature scavenger hunt, children develop a basic awareness of the world around them, including the sun, air, water, and living things. This initial exploration forms a foundation upon which children build a relationship of respect and appreciation for their environment.
Skills: Categorizing, Observing, Recognizing Relationships
Subjects: Science, Art

Activity 2: Meet the Trees

Objective: Children "meet" and investigate trees in their neighborhood. They develop awareness and appreciation of the many roles that trees play in their environment.
Skills: Observing, Measuring, Inferring, Recognizing Relationships, Organizing Information
Subjects: Science, Math, Art

Activity Extension: Radical Roots
Objective: Children explore the concept of erosion, and, through a hands-on demonstration, observe how trees can help prevent erosion.
Skills: Observing, Inferring, Recognizing Relationships
Subject: Science

Activity 3: Water, Water, Water

Objective: Children experience how a rain shower can change their environment, and they begin to understand how all living things depend on water to survive.
Skills: Observing, Comparing and Contrasting, Inferring, Recognizing Relationships
Subjects: Science, Art

Activity Extension: Create a Mini-Water Cycle
Objective: Children learn about the water cycle through a hands-on experiment.
Skills: Observing, Inferring, Recognizing Relationships
Subject: Science

Activity 4: A Single Patch of Earth

Objective: Children realize how a small patch of earth can support a diversity of life. They compare what they find in several patches of earth and consider what conditions encourage life to flourish.
Skills: Observing, Organizing Information, Comparing and Contrasting, Counting
Subjects: Science, Math, Art

Activity 5: Catch the Wind

Objective: Children explore the power of the wind and discuss how people might use the wind as a natural resource.
Skills: Observing, Predicting, Comparing and Contrasting
Subjects: Science, Art, Social Studies

Activity Extension: Make a Wind Gauge
Objective: Children construct a simple instrument to gauge the speed of wind.
Skills: Predicting, Observing, Inferring
Subjects: Science, Math

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Activity 6: Explore Woodsy's Food Connections

Objective: Children explore the ways in which all living things—including themselves—depend on one another for food.
Skills: Recognizing Relationships, Ordering, Organizing Information
Subjects: Science, Art

Activity 7: Water Watching

Objective: Children develop an appreciation of water as a limited natural resource. They estimate how much water they use in a single day to wash their hands, consider why it is important to conserve water, and suggest ways to save water.
Skills: Predicting, Estimating, Recognizing Relationships
Subjects: Math, Social Studies

Activity 8: Woodsy's Paper Caper

Objective: Children recognize the relationship between paper and trees, and realize why it is important to wisely manage the forest's resources. They find out how much paper they use in a single week and explore ways of reusing the paper.
Skills: Predicting, Solving Problems, Recognizing Relationships, Estimating
Subjects: Math, Social Studies, Science, Art

Activity 9: A Great Recipe for Garbage

Objective: Children realize that reducing the amount of garbage they throw away is one way to care for the land. They find out how to reuse garbage by creating compost.
Skills: Predicting, Observing, Inferring, Recognizing Relationships
Subject: Science, Social Studies

Activity Extension: Watch it Rot
Objective: Children observe what happens to unpreserved food after a week. They predict what will happen to the food and learn what causes the food to rot.
Skills: Predicting, Observing, Inferring
Subjects: Science

Activity 10: Team Trash Crafts

Objective: Children develop an understanding of what it means to reuse, reduce, and recycle. They learn why doing these three things helps protect the environment.
Skills: Solving Problems, Recognizing Relationships, Experimenting
Subjects: Art, Social Studies

Activity 11: Deliver Woodsy's Message

Objective: Children explore ways of spreading Woodsy's message, "Lend a Hand—Care for the Land!" to friends, family members, and members of the community.
Skills: Organizing Information, Communicating, Recognizing Relationships
Subjects: Social Studies, Art, Language Arts, Science

Activity 12: Fly, Woodsy, Fly!

Objective: Children use what they've learned about caring for the land by playing a Woodsy Owl board game.
Skills: Recognizing Relationships, Solving Problems, Organizing Information
Subjects: Science, Social Studies

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CORRELATION TO THE *NATIONAL SCIENCE EDUCATION STANDARDS:*

The *National Science Education Standards**, written by the National Research Council, represents the work of scientists, science educators, teachers, and other experts across the Nation. The *Standards* outline what students in grades K–8 must know, comprehend, and be able to do in order to be scientifically literate. The excerpts below were taken directly from the Science Content Standards: K–4 section of the *Standards*. The correlation of these standards to the activities in this guide is entirely our own.

Activity 1, 2, 3:

"Because the child's world at grades K–4 is closely associated with the home, school, and immediate environment, the study of organisms should include observations and interactions within the natural world of the child."

Activity 2 extension:

"Changes in the environment can be natural or influenced by humans."

Activity 1, 2, 4, 5:

"During their early years, children's natural curiosity leads them to explore the world by observing and manipulating common objects and materials in their environment. Children compare, describe, and sort as they begin to form explanations of the world."

Activity 3, 5 extension, 7, 8, 9 extension:

"In the earliest years, investigations are based on systematic observations. Later on, students may design and conduct simple experiments to answer questions."

Activity 6:

"All animals depend on plants. Some animals eat plants for food. Others eat animals that eat plants."

Activity 8, 10:

"The supply of many resources is limited. If used, they can be extended through recycling and decreased use."

Activity 9:

"Humans change environments in ways that can either be beneficial or detrimental for themselves and other organisms."

Activity 11, 12:

"Children develop the ability to explain a problem in their own words and identify a specific task and solution related to the problem."

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ACTIVITY 1

Woodsy's World

Scavenger Hunt!

Take a scavenger hunt to explore how the sun, air, water, and living things are all parts of the natural world.

What you need
Markers, Crayons, Paste, Index cards, Tape (optional), Old nature magazines, Backpack or Jar (optional), Large paper

Time
20–30 minutes to prepare for the hunt
20–30 minutes for the scavenger hunt
20–30 minutes for follow-up collage or mural

Get Ready! Become familiar with the area where children are going to hunt. Prepare three groups of index cards labelled "Air," "Earth," and "Water."

1 **Get Started** by telling children that they are going on a nature scavenger hunt. Talk about what they might find in the air, on the ground, and in the water; list these elements on large paper or chalkboard. Then, write each of these elements on the appropriate index card from one of the three groups–one item per card. Here are a few examples:

Air: clouds, birds, butterflies
Earth: grass, rocks, flowers, trees
Water: algae, insects, fish

2 Now have children cut out photographs from magazines of the air, earth, and water items and paste them onto the cards. Or, have them draw a picture directly on the card.

Tip: *An excellent resource to review before any activity is* Sharing Nature With Children, *by Joseph Cornell (California: Dawn Publications, 1979).*

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3 Divide children into Air, Earth, and Water groups and give them the corresponding scavenger hunt cards. Now, go hunting! Using a crayon, children can write a mark on the index cards of the items they find. Without disturbing the environment, allow children to place a few samples in the backpack or jar such as dried leaves, twigs, and stones.

Tip: *Try to have three adults on the walk, one to help with each type of card.*

Tip: *Bring extra cards with you for unexpected finds!*

4 Now make a Woodsy's World mural or collage that includes everything you found on the scavenger hunt. Children can share and compare what they brought back from the hunt, or even paste things directly onto the mural.

5 Close by talking about the Woodsy's World you've made. Challenge the group to think of ways things are connected to one another. For example, a bird might be connected to a tree where it can build a nest.

Tip: *Remind children that they might not find everything they listed.*

Children often like to be a part of more than one scavenger search group. You may want to give the Water group one or two cards from the other two groups; do the same for the Air and Earth groups.

SCAVENGER HUNT AROUND THE WORLD!

Older children can make sets of scavenger hunt cards for the desert, the ocean, or a rain forest. They can then play a game where each player is handed a card and has to guess whether it's a desert, ocean, or rain forest card.

Try following this activity with activities 4 (A Single Patch of Earth), 5 (Catch the Wind), and 6 (Explore Woodsy's Food Connections).

Words to Know!

Environment: the land, air, water, and all living and nonliving things around us

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ACTIVITY 2

Meet the Trees!

Get to know the trees in your neighborhood.

What you need

String, Construction paper, Tape, Scissors, White paper, Crayons, Paste (optional), Old magazines (optional), Measuring tape or ruler

Time

30 minutes to meet the trees
30 minutes to make tree displays

1 **Get Started** by telling children that they're going to meet the local trees. What are the different parts of a tree? As a group, read *The Giving Tree*, by Shel Silverstein (New York: Harper Collins, 1964). Make a list of reasons why trees are nice to have around. Here are a few:

1. *Trees make things cool and shady.*
2. *Trees make good homes for squirrels and birds, including owls like Woodsy.*
3. *Trees grow tasty fruits like apples and oranges.*
4. *People can use trees to make wood, paper, medicines, and other useful things.*

2 Have children form small groups. Give each one a piece of string about 30 inches long. Walk to an area with a lot of trees. Each group can choose a tree to meet and investigate. Here are some questions to get them started:

1. *Do you see any birds' nests in the branches or insects on the trunk?*
2. *Is the bark smooth or rough? What do the leaves look like?*
3. *Can you see the tree's roots?*

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3 Help children measure the size of the trunk by wrapping their string around the tree. Cut the length of string. Take back tree souvenirs by making bark rubbings and collecting acorns, cones, berries, or leaves that have fallen from the tree. To make a bark rubbing, place a sheet of white paper against the trunk. Then rub the width of a crayon across the paper. Remind children that tearing the bark off a tree can hurt or even kill the tree.

Tip: *Children whose tree trunks are very large may need to tape together several pieces of construction paper.*

4 After the walk, children can use their "tree trunk" string to cut a brown strip of paper of the same length. Measure it and compare the size of each trunk. Encourage children to decorate the strip with the bark rubbings from their tree. Then, they can tape or paste the ends of the strip together to make a model tree trunk. Paste the souvenirs to the outside of the trunk model. Now find a place to display your miniature model forest!

5 Close by talking about what the area would be like without trees. How would this affect an owl like Woodsy?

RADICAL ROOTS!

Explain to older children what erosion is—the wearing away of soil by wind and rain. Then, cut five small holes into the foot of an old brown sock. Attach a green felt band to the top of the sock. Pour enough dirt into a medium-sized box or terrarium to create a "hill" at one end. Put your hand through the sock so that your fingers become the tree roots and your arm becomes the trunk of the tree. Dig your fingers into the soil and pour water onto the dirt from the top of the hill. What happens? Remove your hand from the soil and continue to pour the water. What happens now? What do tree's roots do?
Materials: Box, brown sock, dirt, green felt, water

Words to Know!

Root: part of a plant or tree below the ground that holds the plant or tree in place and draws water and food from the soil

Bark: outside covering of tree trunks that helps keep diseases and insects out of the tree and moisture inside the tree

Follow with activities 8 (Woodsy's Paper Caper) and 10 (Team Trash Crafts).

ACTIVITY 3

Water, Water, Water

Take a rain walk—and explore the wonderful world of water.

What you need

Pictures of water (ice, liquid, and steam), Old magazines (optional), Paper, Crayons or pencils, Ice cube, Cup of hot water, Cup of lukewarm water

Time

30 minutes

1 **Get Started** by showing children pictures of rivers, ponds, waterfalls, ice-skating rinks, snow, and clouds. What does every picture have in common? If possible, have children drink from a water fountain. What does the water taste like? What does it look like?

2 Take a walk in a park or field just after a rain shower. Ask children to use their senses to notice how the grass, trees, flowers, roads, and sidewalks smell and feel. What do they look like? Do children see any puddles? Is the fresh rainwater warm or cold? Ask where they think rain comes from. Look for birds or other animals drinking from puddles.

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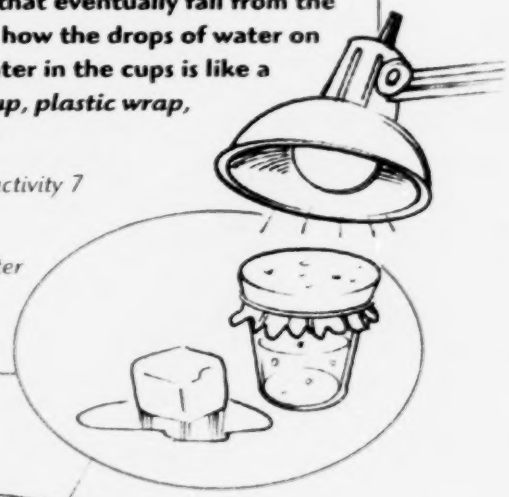
CREATE A MINI-WATER CYCLE!

If possible, show older children an ice cube, a cup of water, and steam rising from a cup of hot water. Discuss what makes ice turn into water, and what makes water turn into steam. What would eventually happen to the hot water in the cup if you continued to heat it up? Fill a plastic cup about halfway with water. Fasten plastic wrap securely over the top using a rubber band. Shine a strong light on the cup (at least 60 watts). Set the experiment away from children during the half hour and make sure they don't touch the light bulb. In about half an hour, children should be able to see water drops forming on the plastic wrap and falling back into the water. Discuss how the sun's heat turns water on the ground into steam, and that the steam then rises and forms clouds. As the steam rises, it begins to cool and turns into drops of water that eventually fall from the sky back to the ground. Help children to see how the drops of water on the plastic wrap are like rain and how the water in the cups is like a body of water. *Materials: Ice cube, plastic cup, plastic wrap, rubber band, water, 60-watt bulb and lamp*

For more watery fun, try following this activity with activity 7 (Water Watching).

Try to reuse the cups and plastic wrap in later projects. Children can use them to make trash crafts in activity 10.



3 *Close* by having children draw a picture of a plant or animal (including themselves!) on a piece of paper showing how it uses water. Encourage children to present their drawings to the group. Read *Rain* by Kay Davies (New Jersey: Raintree-Steck Vaughn, 1995) or *Water, Water, Everywhere*, by Mark J. Rauzon (San Francisco: Sierra Club Books for Children, 1994). Why is water important for all living things—including humans?

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ACTIVITY 4

A Single Patch of Earth

Perform detective work on a small patch of earth and see how it can be home to many living things.

What you need
Cardboard or manila file folders, Scissors, Tape, Paper, Pen and/or crayons, Notebook or clipboard, Optional: Backpack, Jar, Rulers, Hand lens

Time
40 minutes

Get Ready! Cut the cardboard into frames (about 12 x 12 inches) ahead of time for younger children. Scout out some good places to investigate.

1 **Get Started** by telling children that it's possible to find over 300 worms in a small garden! Show children an Earth Investigation Frame and tell them now is their chance to be "Special Detectives of the Earth."

2 Divide your group into Detective Squads (of two or three children) and give each pair an Earth Investigation Frame. Choose two or three zones where squads can lay down their frames. Have squads rotate to another investigation plot about every 15 minutes. Remind children that good Earth Detectives always write down or draw pictures of everything they find including grass, scraps of litter, and ants. Your detectives should bring along sturdy notepads or clipboards to make

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All the living things (worms, insects, plants) combined from a 6-inch-deep area the size of a football field can be almost as heavy as four elephants!

IMAGINE WHAT AN ANT MIGHT SEE!

Challenge older children to write a story or draw a picture about what a patch of earth would look like if they were the size of an ant. Activate their imaginations with the book *Two Bad Ants*, by Chris Van Allsburg (Boston: Houghton Mifflin, 1988).

Children can also take home their stories and Earth Investigation Frames—encourage them to play Earth Detectives with family members in their own backyard!

Try this activity with activities 9 (A Great Recipe for Garbage) and 1 (Woodsy's World Scavenger Hunt).

writing or drawing what they find easier. When they finish examining one plot, have them count how many items they found in it. Allow children to bring back samples of living and nonliving things when appropriate.

Tip: Make sure the area you investigate is free of poison ivy.

3 **Close** by having each squad draw pictures of what they found and tape them behind their Earth Investigation Frames. Have them present their frames to the group and talk about what they found in each plot.

Tip: Make copies of the Woodsy Owl detective badge on page 36 for children to wear during the investigation.

ACTIVITY 5

Catch the Wind

Make simple pinwheels to explore the power of wind.

What you need

Thin cardboard or file folders, Straws (regular and jumbo), Scissors, Pinwheel patterns (page 37), Hole punchers

Time

30 minutes

Get Ready! Make copies of the pinwheel design on page 34 ahead of time. Practice assembling a pinwheel.

1 **Get Started** by challenging children to describe the wind. Is it windy out today? How can they find out? What's it like when a strong wind is blowing? What happens to their clothes and hair? Do they see leaves and twigs blow by?

2 Tell children they're going to make wind-powered pinwheels. Have them tape the pinwheel design to a piece of cardboard or manila folder. Then, cut the paper along the dotted lines. (See page 37 for detailed instructions.)

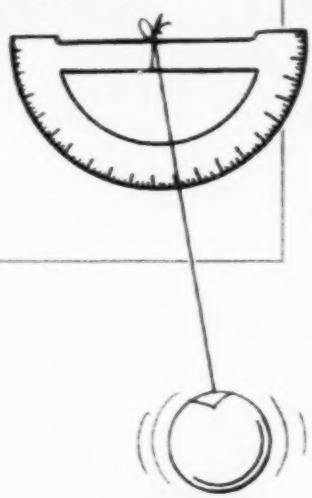
HOW FAST IS THE WIND BLOWING?

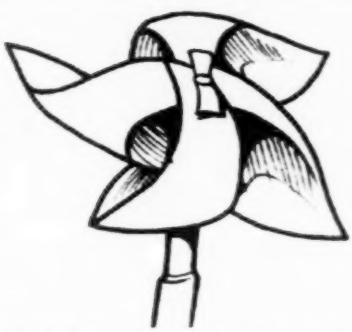
Older children can construct wind gauges to measure how fast the wind is blowing. Glue a length of string (about 10 in.) to a table tennis ball. Then tie the other end of the string to the center of a protractor. Take the gauge outside and hold it parallel to the wind so that the string rests at 90 degrees. By reading the angle that the ball is blown, children can estimate the wind speed. When the string hits 75 degrees the wind is about 6 mph, at 60 degrees it equals 15 mph, and at 25 degrees it equals about 30 mph—a very windy day!

Encourage children to take home their wind gauges and teach other family members how to use it.

Materials: Protractor, string, table tennis ball, glue

Try following this activity with activity 1 (Woodsy's World Scavenger Hunt).





3 Take the pinwheels outside. Is a light or strong wind blowing? Hold up the pinwheels to catch the wind. If it's not windy enough, try other ways to make pinwheels spin.

4 Close by talking about ways that people can use the wind's power to make energy. If possible, show children pictures of a modern windmill farm. Try standing the pinwheels in front of an open window in your activity area.

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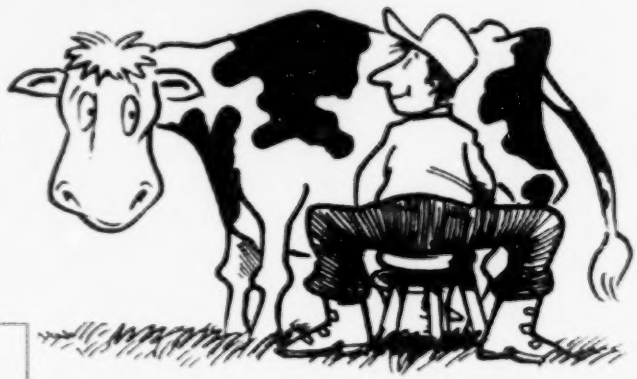
ACTIVITY 6

Explore Woodsy's

Food Connections

Discover how living things depend on one another for food.



What you need
Paper, Tape, Markers

Time
45 minutes

1 Get Started by modeling a Woodsy Owl food chain. Have one child represent Woodsy. Have children name one food that owls eat, such as mice. Have another child hold hands with the first to represent a mouse (or other creature). What does a mouse eat (seeds)? A third child can hold hands with the second and pretend to be the seeds. Then each child in the chain can say what he or she is and what he or she eats.

2 Play the game again, this time having one child stand up and naming something he or she likes to eat (like eggs). Name what plant or animal that food comes from (a chicken) and have a second child represent that plant or animal. If the second child is an animal, name what that animal eats (corn) and have a third child stand up and hold hands with the second. Play until each child has been part of a chain.

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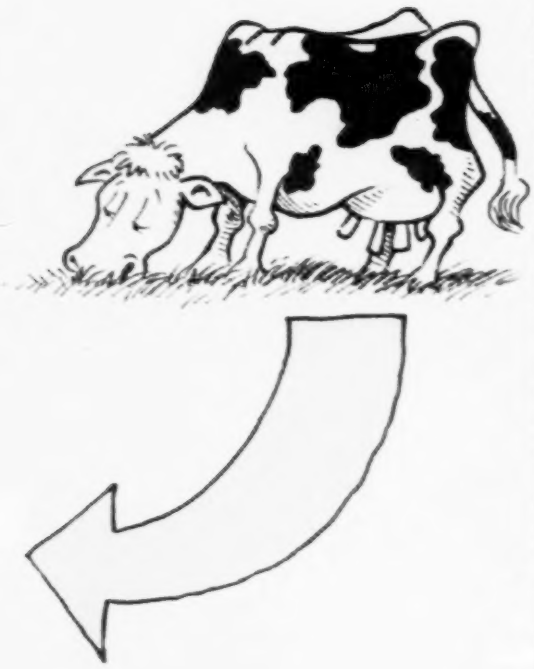

MAKE FOOD CHAIN CHAINS

Working in small groups, older children can use strips of construction paper to make food chains. Have each group think of a simple food chain and then write or draw each plant and/or animal in the food chain on a separate strip of paper. Have them tape the ends of the first strip to form a loop. Then, slip the second strip of paper through the loop and tape its ends together so that the two loops form a chain. Repeat this with the third and fourth strip of paper, and so on until the chain is complete. If possible, hang the chains along a wall or from the ceiling.

Try this activity with activity 1 (Woodsy's World Scavenger Hunt).

Words to Know!

Food chain: a chain of plants and animals in which the first living thing in the chain is food for the second, the second for the third, and so on. For instance, grass is food for a deer, and a deer is food for a mountain lion.

3 Have children make collages of animals (including people) and the foods they eat. They can cut pictures of the foods, plants, and animals out of old magazines. Children can base their collages on some of the simple food chains they just created or think of new foods.

4 Close by setting up a display that shows the children's food collages. Have children talk about what they included in their collages. What are some of the foods that the children depend on to survive? What do some of the animals that they drew like to eat? A good book to read is *Who Eats What?* by Patricia Lauber (New York: Harper Collins, 1995).

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ACTIVITY 7

Water Watching

Investigate how much water people can use in a day.

What you need

5-6 empty plastic soda bottles (1 liter) with tops cut off, Digital watch or watch with a second hand, Sink with running water, Paper, Pencils, Large bucket or container (optional), Crayons or markers

Time

20-30 minutes

Get Ready! Ask children to bring plastic soda bottles from home. Mark the bottles with "cup" measurements for estimating amounts—there will be about 4 cups to a 1 liter bottle. Cut the tops off the plastic soda bottles after the fourth cup measurement.

1 **Get Started** by asking children to think of ways they use water on a normal day—from the moment they get out of bed to when they go to sleep. Show them a plastic soda bottle full of water. How many bottles of water do they think it takes to wash their hands? Tell them they're about to find out!

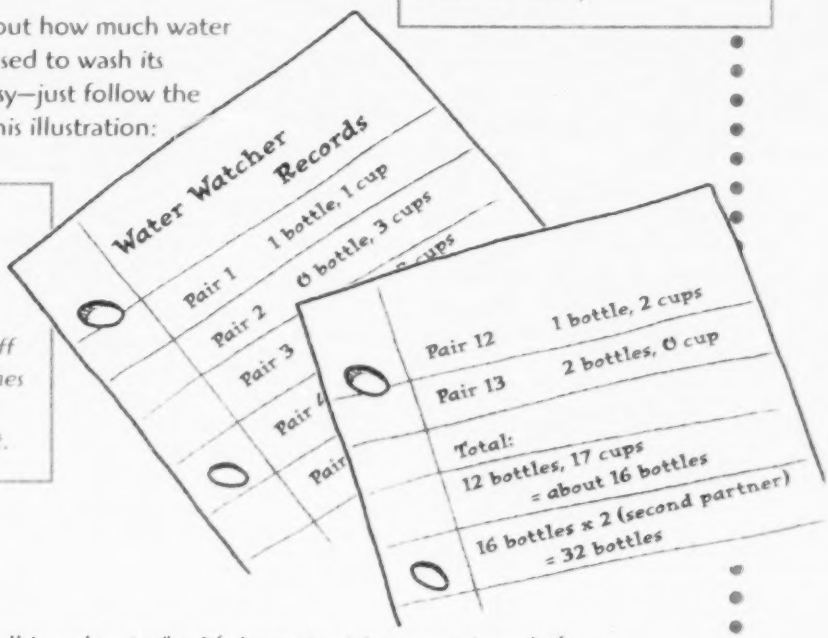
2 Divide your group into Water Watcher pairs. One Water Watcher can time and write down how long it takes for the other to wash his or her hands. Then, have them run the faucet for the same amount of time using the bottle(s) to collect the water. Have them record how many

Tip: *Remind children that it's not a competition to see who can wash their hands in the shortest or longest period of time!*

bottles they filled. Help children round up or down to the nearest cup to find out how much water they used.

Tip: *Stress that having clean hands is important to stay healthy and that it's okay to use water in this way.*

3 Now, figure out how much water each group used to wash its hands. It's easy—just follow the example in this illustration:


Water Watcher Records
Pair 1 1 bottle, 1 cup
Pair 2 0 bottle, 3 cups
Pair 12 1 bottle, 2 cups
Pair 13 2 bottles, 0 cup
Total:
12 bottles, 17 cups
= about 16 bottles
16 bottles x 2 (second partner)
= 32 bottles

Tip: *Store the clean water from the bottles to water indoor or outdoor plants, or to rinse off paintbrushes during an art project.*

4 **Close** by talking about why it's important to use water wisely. Some children may think that the earth has an unlimited supply of clean water. What are some ways to save water? One way is to not let the water run while you brush your teeth, another way is to take showers instead of baths.

Tip: *While children are waiting for their turn, they can make posters that encourage others to use water wisely.*

It takes about 26 bottles of water to flush a toilet—about 110 bottles to take a bath, and 95 to take a shower.

MORE WATER ARITHMETIC!

Older children can set up addition or multiplication equations to find out how much water they would use in a day, week, month, or year. Children can cut out little paper bottles and paste them on a posterboard to show their equations and results.

Try this activity with activities 3 (Water, Water, Water) and 11 (Deliver Woodsy's Message).

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ACTIVITY 8

Woodsy's

Paper Caper

Trees provide homes for animals—and they also provide people with the material to make paper! Collect the paper you use in a week—then figure out a way to use it again.

What you need

Large container, Paper or posterboard, Crayons and markers

Time

20 minutes to design containers
1 week to collect paper
20 minutes to reuse paper

Get Ready! Set aside a place to store the collected paper.

1 **Get Started** by talking about where paper comes from. Talk about how important it is for people to plant new trees to replace the ones they cut down. Tell children that they're going to find out just how much paper they use in a single week.

2 Show children the containers set aside for used paper collection. Explain that they are to put all the paper (and only paper) that they use into the containers. Decorate the containers with bright signs that say "Paper Only!" or "Woodsy's Paper Caper Container."

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Tip: *Let everyone in your classroom, school, or after-school center know that they should put their used paper into the containers.*

3 After 1 week, gather children around the containers of paper. Are they surprised at the amount of paper they used in a week? Try to guess how much paper you would go through in a month. For instance, if you used two containers in 1 week, you could help children work through the following equation: 2+2+2+2=8. Older children may want to estimate how much paper they would use in a month or a year. Have children add the figure for a week four times, to determine a month. Have them add the figure for a single month 12 times or use a calculator to multiply by 12.

4 **Close** by thinking of a fun, creative way to reuse the week's worth of paper. Children can make notepads for themselves, or as gifts for friends and family members. Simply punch holes in a small stack of paper and bind it together with yarn. Talk with children about ways to reduce the amount of paper they use. One easy way is to always use both sides of the paper.

Construction paper, paper cups, paper plates, tissue paper, toilet paper, paper towels, wrapping paper, and newspaper all come from trees!

MAKE THE PAPER CAPER PERMANENT

Set up a permanent paper collecting container in your after-school center or classroom. Make signs to let everyone know that the paper is going to be recycled. Children can use the paper they collect for other art projects. Or, save the paper and use it for the compost in activity 9.

Encourage children to set up Woodsy's Paper Caper containers at home, too.

Try this activity with activities 2 (Meet the Trees) and 11 (Deliver Woodsy's Message).

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ACTIVITY 9

A Great Recipe for Garbage

Show children that organic garbage can be composted to create new "living" soil.

What you need

Fish tank or Box lined with plastic, Long-handled spoon or stick, Water, Small pieces of food waste, Leaves or grass, "Living" dirt (with earthworms!), Gloves or plastic bags, Hand lens (optional), Shredded paper (optional).

Time

40 minutes to construct the compost
2 or more weeks to observe changes

Get Ready! Gather pieces of garbage to compost. (Don't compost oily items or dairy or meat products.) Order earthworms through gardening or science catalogs, composting companies, or a local bait shop. You may want to have children dig up worms from a garden or park. For a Composting Fact Sheet, send a self-addressed stamped envelope to the Ecology Center, 2530 San Pablo Avenue, Berkeley, California 94702.

1 **Get Started** by showing your kids the garbage you have collected. Tell children that instead of dumping food and plant waste, people can compost their garbage. Composting is like a recipe for turning garbage into rich soil for growing plants. The ingredients are soil, pieces of garbage, air, water. Adding earthworms helps speed the process! Ask them what they think worms in the soil eat. Will they eat the garbage?

Tip: *Some children may be uncomfortable with worms. Others may be fascinated with them. If possible, provide children with books about worms. Set aside time for children to handle the worms before putting them into the compost.*

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2 Place the mixture in a box lined with plastic in this order:

1. soil (with worms)
2. food waste (fruit and vegetable peels, egg shells, tea and coffee grounds)
3. plant waste (grass clippings, weeds, twigs)
4. water
5. soil (and so on)

Have children water the compost until it is moist and cover the top and sides of the compost. (Earthworms prefer being in the dark.)

Tip: *Use the paper you've saved from previous activities to line the compost box (along with the plastic).*

3 Over the next few days, your composters can take turns watering the compost or stirring in any extra garbage.

4 Close at the end of at least 3 weeks by having the children observe the changes that have begun. (If possible, wait for 2 weeks more!) How has the mixture changed? What happens to the food that worms eat? Ask what the compost can be used for (growing plants).

Tip: *While children are waiting to work with the mixture, they can create an illustrated poster indicating what can and can't be composted. (Beef, chicken, fish, pork, buttery or oily scraps, and dairy products should not be composted.)*

WATCH IT ROT!

Children can gather a few scraps of food and place them in sealable clear plastic bags. Label each bag and tape it to a wall. Check the bags after several days, and then after a week. What is happening to the food? Tell children that tiny creatures are eating the food and breaking it down into tiny pieces. After a week, empty the bags into the compost. Children can also place compost in milk cartons and use it to grow plants.
Materials: Food scraps, sealable clear plastic bags

Try doing this activity with activities 4 (A Single Patch of Earth) and/or 10 (Team Trash Crafts.)

The total garbage each adult in America throws out in a year weighs about as much as 25 children (about 1,200 lbs.)!

Words to Know!

Composting: a way of turning plant and food wastes into soil. The process is quickened by the action of worms

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ACTIVITY 10

Team Trash Crafts

Help children realize that many of the things people throw away every day can be reused in creative ways.

What you need

Boxes, Milk cartons, Scissors, String, Sticks, Egg cartons, Seeds, Beans or Sand, Coffee cans, Materials saved from previous activities (optional), Large box

Time

30-40 minutes per creation

Get Ready! Prepare a few examples of trash crafts to show children. As a group, brainstorm a list of things you can reuse. Have each child bring in at least one thing they would otherwise throw away that could be used to make something new. You may want to send a brief note to children's parents explaining the activity. An excellent resource to review in advance and use during the activity is *Likable Recyclables* by Linda Schwartz (Santa Barbara, CA: The Learning Works, Inc., 1992).

1 **Get Started** by talking about the three R's for the environment: reducing, reusing, and recycling. Buying loose, unpackaged fruits and vegetables reduces the need for plastic wrappings and Styrofoam. Once you have used something once, find out how to use it again. When you reuse a soup can as a pencil holder, you make less garbage. Recycling is another way to create less garbage. Recycling means to send used things (such as soda cans and plastic containers) to a factory that turns them into new things (such as a new soda can or a plastic bench).

2 Each child can choose one or more items to create:

- Bird Feeders—Cut a hole (about 1 1/2 inch in diameter) one-third up a milk carton or plastic soda container (from activity 7). Poke a stick through the container just under the hole. Punch a hole in the top and loop a piece of string through it. Punch a small hole in the bottom to let out rain and fill it with birdseed. Hang it from a nearby tree or outside your window.
- Miniature Gardens—Punch a small hole in the bottom of a used plastic cup (from activity 3), or used plastic soda bottle (from activity 7). Fill each hollow with soil and plant a seed. (Follow instructions on the seed packet.)
- Instruments—Make musical shakers by filling milk cartons with beans, beads, or sand. Glue colorful scraps of paper (from activity 8) onto the shakers.
- Toys—Create pull toys out of used detergent bottles, buttons, and string. Hand puppets and dolls can be made from old socks, gloves, yarn, and other material.

3 **Close** by holding a Trash Crafters Open House where children can display their creations. Invite the whole program or school! Encourage your group to set up a recycling center in your room to collect reusable waste materials.

Challenge children to think of one way to reduce, one way to reuse, and one way to recycle. How is each method different?

REUSE IT: DON'T LOSE IT

Keep a box of reusables handy for creative activities on other days. Children's families also can begin reusable centers in their homes.

Invite children to bring or describe a family trash craft creation.

Try following this activity with activity 11 (Deliver Woodsy's Message).

Words to Know!

Recycle: to turn things that have been used into new things, so they can be used again

Reduce: to find ways to use fewer resources and make less waste

Reuse: to use something again in new ways instead of throwing it away

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ACTIVITY 11

Deliver Woodsy's Message

Review Woodsy's message "Lend a Hand—Care for the Land!" with your children and have them share this awareness with others.

What you need

Poster board, Paint, Brushes, Construction paper, Scissors, Tape or Safety pins, Hangers, String, Paper, Pens, Envelopes

Time

40-60 minutes to think of a simple message and create items

1 **Get Started** by reviewing Woodsy's message with children. Talk about the local community. Help children to think of a way to carry Woodsy's message further. Your message may be as simple as encouraging everyone to plant a tree or to use public transportation. Use all or some of the following ideas to spread your message:

- Posters—One group can make posters that feature Woodsy Owl and show what people in their school can do to help keep the local environment clean. Help your children find good places to display their posters where other children will see them, such as schools and libraries.
- Mobiles—One group can make mobiles to hang in the room. The mobiles should present positive images such as Woodsy, a tree, or a recycling symbol. Mobiles can be hung from hangers or sticks.
- Play—A group of children can choose to write the script for and put on a play about The Cleanups, a family that loves to clean up litter and has just moved into the neighborhood. Invite families and other residents of the community.

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MAKE THE NEWS!

Invite local news media to interview the children as they create their Lend a Hand—Care for the Land! projects.

Try doing this activity after activities 7 (Water Watchers) and 8 (Woodsy's Paper Caper).

- Poetry—Individual poets can create shape poems about nature. Shapes can include a tree, Woodsy Owl, or a leaf. Hold a poetry reading or display the poems around the school or at a community center.
- Clean Environment Rap—Small groups can create a rap song about reducing pollution to create a cleaner environment. Then, have them give a concert.
- Plant a Tree—Plant a tree on the grounds of your school or after-school center. Hold a new tree ceremony and invite friends and family members.

2 *Close* with each group sharing their messages and projects.

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ACTIVITY 12

Fly Woodsy, Fly!

What you need

Game board, game cards, one die (making a giant die can be fun), a different colored playing piece for each child (button, bead, eraser, etc.)

Time

20–25 minutes

Tips: *With children who do not yet read, play the game with one small group at a time.*

You and your children can make up your own questions based on the activities you have completed. Write them on the blank cards provided.

You can make this game a cooperative activity by having the children play in teams.

Laminate the game and cards for ease of use.

Make extra copies of the board game and cards for children to take home and play with their friends and family members.

Get Ready!

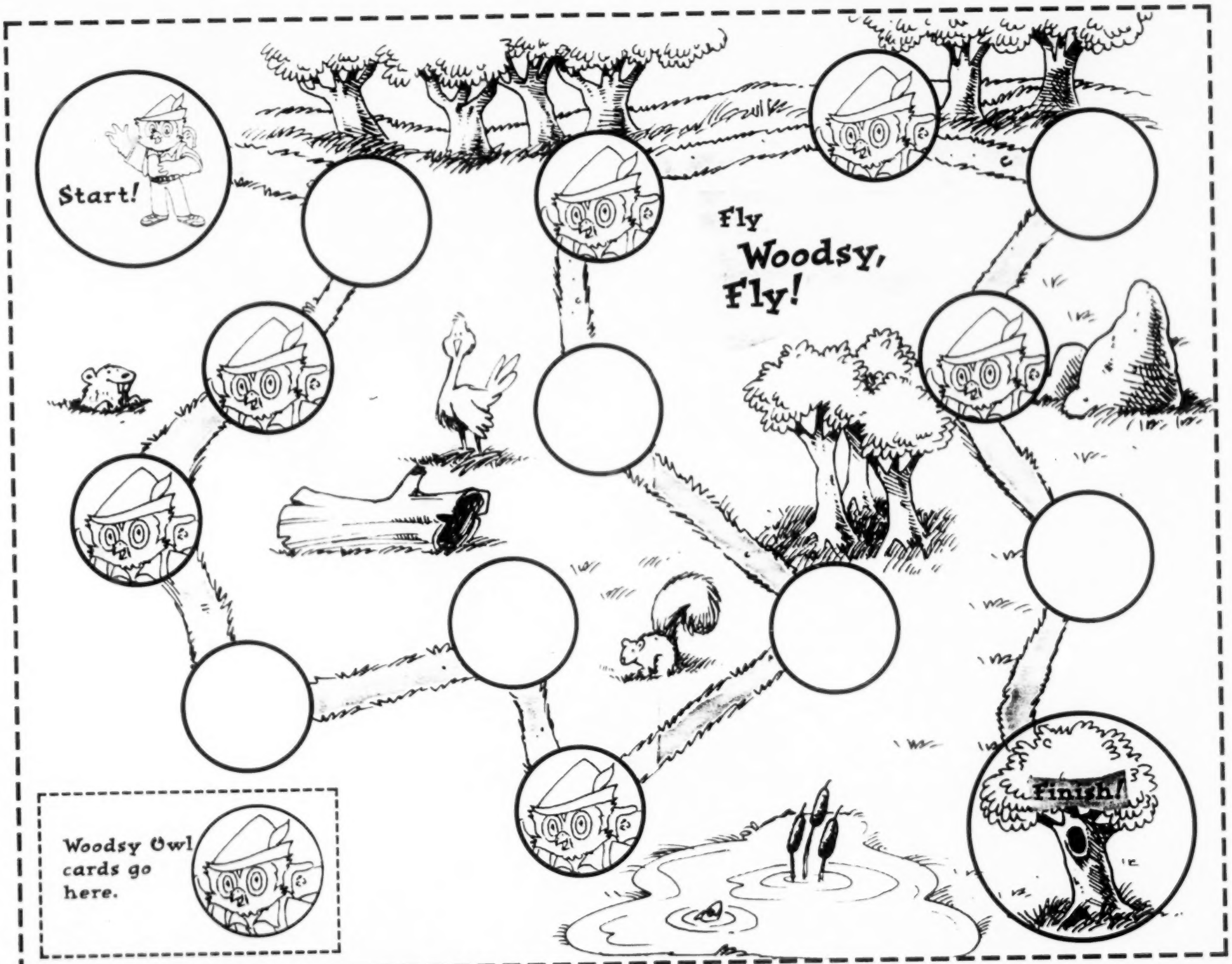
Photocopy the Fly Woodsy, Fly! game board and cards for the number of groups who will be playing at one time. Cut the cards and place them face down on the game board.

Game Rules

The object of the game is to reach Woodsy's tree. When all players have reached the tree, the game is over.

1. Players roll the die and move the number shown.
2. If player lands on Woodsy, pick a card and respond to the question or instruction. If player answers the question correctly, move the number of circles on the card. If not, the player does not move until his/her next turn.
3. Player may not pick up more than one card per turn.
4. Two players may occupy the same circle.
5. Player does not need to reach the tree on an exact roll.

Play it again!



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Name one reason why the wind is important.

Fly forward 1 circle.

Name one way that you could stop wasting water when you wash.

Fly forward 1 circle.

Name one thing that worms eat and one thing that eats worms.

Fly forward 2 circles.

Name one way that you can reduce garbage and one way that you can reuse garbage.

Fly forward 1 circle.

Give one reason why water is important.

Fly forward 1 circle.

Name one animal that lives on land, one that lives in the water, and one that lives in the air.

Fly forward 3 circles.

You left your candy wrapper on the sidewalk!

Fly backward 2 circles.

Name one way that trees help us.

Fly forward 1 circle.

You planted a tree!

Fly forward 2 circles.

Name one way you can spread Woodsy's message, "Lend a Hand— Care for the Land!"

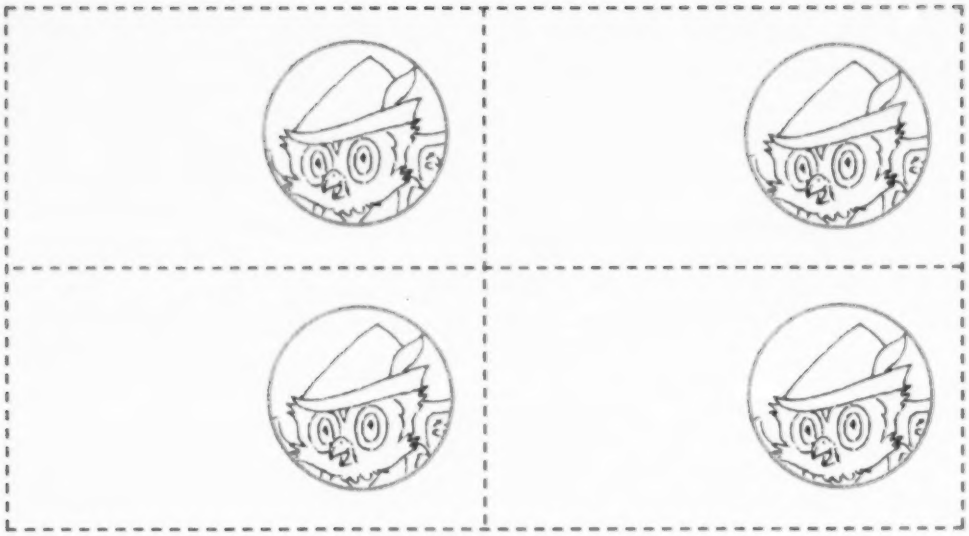
Fly forward 1 circle.

You forgot to recycle your soda can!

Fly backward 2 circles.

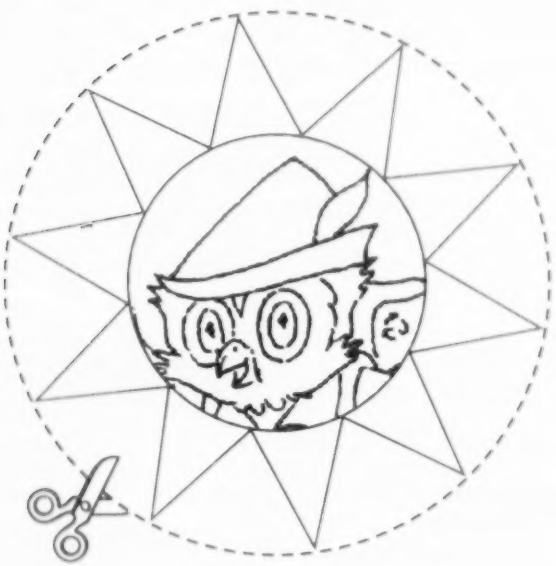
Name one thing that you can recycle.

Fly forward 1 circle.



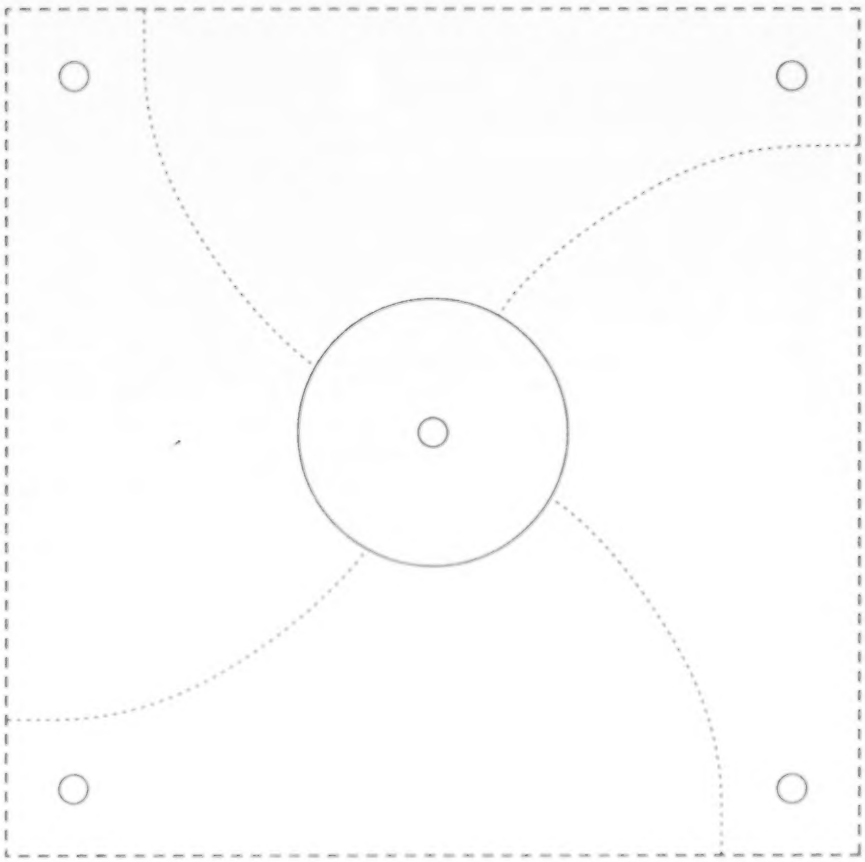
Use the blank cards to write questions based on the activities you have completed.

Woodsy's Detective Badge



Pinwheel Assembly

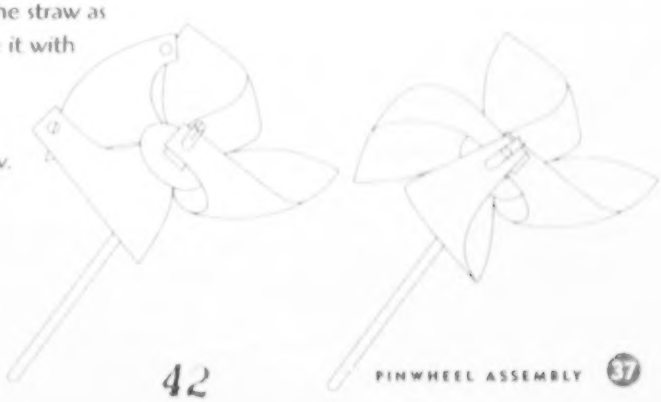
1. Cut out the pinwheel pattern. Punch holes in each of the four wings of the pinwheel and through the center.



2. Cut along the curved lines. Cut a 1/2 inch slit in the end of a regular straw and insert the cut end of the straw through the pinwheel, as shown in the diagram.

3. Pull each of the wings over the straw and then spread out the end of the straw as shown in the diagram. Secure it with a small piece of tape.

4. Complete your pinwheel by inserting it into a jumbo straw.



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Pamela Godsey
Program Manager
National Resource Conservation Education
USDA Forest Service

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